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TABLE OF CONTENTS.

PAGE.

EDITORIAL ARTICLES:—Harmony in Small Country Places 339
William L. Bradley 340
The New View of the Hortulana Plums ..... *Professor F. A. Waugh.* 340
Cruelty of Asclepias ..... *Mrs. Mary Treat.* 341
Notes from Santa Monica Forestry Station ..... *Professor John H. Barber.* 341

NEW OR LITTLE-KNOWN PLANTS:—Coriaria Japonica. (With figure.) ..... *C. S. S.* 342

FOREIGN CORRESPONDENCE:—London Letter ..... *W. Watson.* 344

CULTURAL DEPARTMENT:—Gooseberries ..... *W. N. Craig.* 345
Fern Notes ..... *W. H. Taplin.* 345
Gloxinias ..... *William Scott.* 346
Hardy Perennials ..... *Robert Cameron.* 346
Rock Garden Notes ..... *G. W. Oliver.* 346

CORRESPONDENCE:—The Green Scale of Coffee ..... *Professor T. D. A. Cockerell.* 347
Hardiness of the Montbretias ..... *C. W. Hoitt.* 347
Japan Plums ..... *E. O. Orpet.* 347

NOTES 348

ILLUSTRATION:—Coriaria Japonica, Fig. 45 343

Harmony in Small Country Places.

IN planting the ornamental grounds of a small country place a wise choice of material is just as important as a wise decision with regard to the needed amount of foliage and its proper distribution. Of course, almost all of Nature's products are beautiful when considered in themselves; but now that the resources of all climes and countries are at the planter's command, he may so combine and contrast beautiful plants that their collective effect will be displeasing.

The most important quality to obtain in ornamental grounds is unity—harmony of general effect. And, in one sense, it is very hard to obtain, for it means much self-denial. Horticultural interest develops with its exercise. Year by year the planter is tempted to introduce more and more kinds of plants within his gates, as his knowledge of their variety and his appreciation of their different kinds of beauty develop. If his place is very large he may somewhere find a good chance to indulge all his likings. But on a small place formal avenues and graceful groves and clumps of trees of many sorts, peaceful lawns and varied shrubberies, orchards, flower-borders, rose gardens, pineries, arrays of native flowering-plants, and collections of showy exotics cannot all be secured without detriment to the effect of each group and fatal injury to the effect of the place as a whole. Many things in themselves desirable must sternly be refused admittance if the most desirable of all possible things—restful harmony in the general result—is to be achieved.

Given a small place, the best course for the owner to pursue is, first, to decide whether he has so strong a desire for a collection of any special sort that he positively cannot do without it. If he decides that he has, he should reserve for it the spot where it will interfere least with the effect of the rest of his grounds. And then he should sacrifice his desire for collections and specimens of other sorts and simply endeavor to make the remainder of his grounds beautiful.

In prosecuting this aim the best test will be the question: Will the result please the eye of a cultivated person who is not a horticulturist? Will it, for example, please the eye of an artist? This is the only right result to secure in the grounds immediately about a dwelling-house. If they are given up to the indulgence of special horticultural tastes they may prove very interesting to examine, but they will not be beautiful as a picture. And the environment of a home should always be a charming picture of one sort or another.

If this truth has been accepted, and if, as was indicated in a former article, the owner has decided where his thicker plantations shall be made, and where his more isolated trees and shrubs shall be set, still he is not ready to begin actual work. He must decide what kinds of trees and shrubs and flowering plants he will use to produce his artistic little landscape. If any conspicuous plants of Nature's growing already occupy his ground, the proper character of his scheme is indicated thereby. Nothing should be introduced which is out of harmony with them, and the most harmonious things are likely to be those which Nature has associated with them in this same part of the world. No rule, however, is more generally ignored than this. The more definitely Nature has laid down the path which the planter should follow, the more likely he is to wish to escape from it. If his grounds are altogether bare, he may be satisfied to set out native Maples, Elms, Pines or Hickories. But if some of these already grow inside his fences he is pretty sure to seek the nurseryman and inquire what he can offer that will add "variety" to his place. Thus we may discover the genesis of those unfortunate agglomerations of inharmonious trees, shrubs and flowering plants which so often distress the careful observer of American country places. Monotony has been feared; variety has been desired; an inartistic medley is the result; and very often it is of a glaring kind, including profuse displays of plants which bear foliage of some abnormal hue, red or yellow or purple, bluish or whitish, blotched or streaked, or which grow in abnormal forms, weeping or pyramidal, prostrate or umbrella-shaped. Even a single plant of ny asuch sort should not be introduced into our plantations without great care. But if many are employed the effect cannot be good, no matter how much care is taken. Simplicity, restfulness, naturalness, harmony—these are the great requirements, and all of them are sacrificed when many eccentric, abnormal, or even very showy plants are introduced. Many a small place which has been filled with these at great expense is an offense to the eye of the artist, and all the more so if dignified trees or beautiful shrubs of native growth raise their heads amid the medley. And, morever, real variety is not thus achieved. While each place is a medley in itself, each one resembles its neighbor, for the owners of all have been guided by the same mistaken ideas and followed the same mistaken path.

Variety is indeed desirable in our pleasure-grounds. They should not be individually monotonous; they should not all resemble each other, and they should not look like bits reserved from pre-existent meadows or cut out of pre-existent forests, no matter how beautiful these meadows and forests may have been; they should all reveal the touch of art, and each of them should have its individual, personal charm. Nevertheless, a study of the native forest and the neighboring meadow, brookside and glen will afford the best possible patterns for the effective and varied as well as for the harmonious planting of our pleasure-grounds.

Among the hills and valleys and higher mountains of northern New Jersey and southern New York, for instance, many colonies of summer residences have been established in recent years, many fine large country places have been laid out, and the suburbs of many towns show streets of pretty cottages or expensive villas. Nowhere has Nature been more lavish with the beauty or with the variety of her gifts than in these regions; yet nowhere can more pitiful, or pitifully costly, mistakes in the way of planting be discovered. Hundreds of villa grounds and small places may be examined, and very few be found which are not deformed by a profusion of eccentric exotics or garden varie-

ties, and scarcely one in which an intelligent attempt has been made to secure variety in the right way. When the plantations are not varied in the wrong way—in the heterogeneous way—they are monotonous and uninteresting. Yet every acre of the "unimproved" countryside is filled with suggestions how to secure variety in the right way—in the harmonious way.

We have in mind, for example, a certain thickly wooded region where many summer homes have been recently established. Its forests are diversified as only American forests can be. But their predominant trees are Maples, Hickories, Chestnuts, Beeches, Hemlocks and Oaks of several kinds. In consequence, where the native growth has not been obliterated in the neighborhood of a house, these are the trees which most often have been preserved. Naturally, a certain monotony of effect would ensue without further planting; and, therefore, almost every owner has sought to relieve it by introducing striking exotics and abnormal garden varieties of trees and shrubs. If the intending planter would study the borders of the neighboring forest it would supply him with variety enough. Here and there he would find the Yellow Birch, with its beautiful bark and delicate leafage; the Tupelo, with its dark and shining leaves and picturesque habit; the Dogwood, with its unrivaled sheets of blossom; the magnificent Tulip-tree and dignified Basswood; the Red Cherry, with its burden of gleaming fruit; the Hop Hornbeam, with its pale green tassels of seed; the Sassafras, with its leaves of peculiar shape and varied tones of green, and the White Pine, so softly symmetrical in youth, so splendidly picturesque in age. These are the secondary trees of the forest in this particular region. None of them is able to reach its most beautiful development beneath the denser shade and amid the stronger arms of its more prominent associates. But any one of them, if planted where it would have room to spread and preen itself in the wind and the sunshine, would be much more ornamental than the Swiss and Austrian Pines, the Colorado Spruces, the European Maples, the Copper or Weeping Beeches, the cut-leaved Birches, the sickly-looking striped Negundos, the piebald Retinosporas, the golden Elders, or the stiff Altheas which have been profusely planted in their stead in the pleasure-grounds of the neighborhood. And, of course, the general effect of a place adorned with them as companions for the larger trees of native growth would present an harmonious effect which is now the very rarest merit that characterizes a small American country place.

William L. Bradley.

THE recent gift of twenty thousand dollars to Harvard College by Miss Abby A. Bradley in honor of her father was briefly noted in these columns a few weeks ago, when it was stated that the income of this endowment, to be known as the William L. Bradley Fund, is to be expended by the Director of the Arnold Arboretum to advance the scientific knowledge of trees. At the request of President Eliot, of Harvard, a sketch of the life of this energetic man was prepared by Miss Bradley, and as showing something of his enthusiasm for the subject which the fund commemorates, we publish the sketch now, with Miss Bradley's permission:

William L. Bradley, late of Hingham, Massachusetts, was born in Cheshire, Connecticut, May 25th, 1826. His father, Levi Bradley, was a prosperous farmer of Cheshire, and the son lived on the farm until the age of thirteen, when he entered mercantile life.

An unusual interest in agricultural pursuits determined his career. His attention having been attracted by certain discoveries in Germany of a method for producing chemical fertilizers, he decided in 1860 to embark in this new and undeveloped enterprise. Many years were spent in laborious research in the laboratory and in experiments in the factory and field before the business was profitably established. But by force of high character, an indomitable will and great business sagacity, in face of obstacles which would have daunted a nature less resolute and far-seeing, he successfully founded the manufacture of chemical fertilizers in this country, and built up a business which during his lifetime became the largest of its kind in the world. He was also one of the first to enter the phosphate mining industry. In the early days of the first mining in South Carolina, and later in the more recent discoveries in Florida, he was one of the largest investors and one of the most progressive operators.

With a decided natural taste for the cultivation and improvement of the soil, he had also a great love of the beautiful in nature, with an especial fondness for trees. As a boy on his father's farm he spent much time alone in the woods and studied their various forms and habits. There was no tree or wayside shrub of that neighborhood which he did not know.

At the age of twenty-five he was able to own a large tract of land in Meriden, Connecticut, where he then lived. This land he improved extensively, draining, laying out roads, planting trees and carefully guarding the woodland. The possession and improvement of land, as years went on, became the recreation and passion of his life. He owned large tracts in nearly every Atlantic state from Maine to Florida. Among other farms, he owned a half interest in Montpelier, President Madison's beautiful estate in Virginia. The old manor house was repaired and made habitable and the exhausted land was brought into a high state of cultivation.

But it was during the later years of his life, at Hingham, when he had partially laid aside the cares of his great business, that he chiefly indulged his taste for planting trees, laying out roads and for the various occupations of landscape-gardening. Trees were planted along the roadside bordering his estate and thousands on the open lands. A large nursery of evergreen and deciduous trees was established. The wooded land on this estate was his especial delight, and many precautions were taken to guard it from fire or injury. Any particularly fine tree was brought into relief and given every opportunity to develop, while the shrubs were carefully preserved, and hundreds of native growth were transplanted. He entered into this congenial pursuit with the same energy and enthusiasm, and with the same breadth of spirit, that distinguished his business career.

It was here amid the work he loved so well, and with many plans for further improvement still unmatured, that he was stricken with his last illness, and died December 15th, 1894.

The New View of the Hortulana Plums.

WHEN in 1892 Professor Bailey proposed the species Prunus hortulana to include the Wild Goose Plum and its nearest relatives, it was at first a relief and afterward a puzzle to horticulturists. It was a relief to have these anomalous forms separated from Prunus Americana and from P. angustifolia where they had previously caused confusion; and it was gratifying to have them separately characterized, even though it was very difficult to make the specific description fit all the varieties. But to maintain a description for the species which would fit all the varieties has been an ever-growing puzzle. And thus a second time Professor Bailey has brought us relief by his decision* that this is "a mongrel type of Plums, . . . no doubt, hybrids" of Prunus Americana and P. angustifolia.

This new view of the Hortulana Plums seems likely to find much readier currency among pomologists than did the distinct species view. Indeed, some reputable horticulturists have never accepted the separate species notion; and no two anywhere or at any time have fully agreed upon the varieties which were to be referred to the species.

These cultivated varieties present an inextricable confusion of closely graded differences of character passing without a break from Prunus Americana, through the Miner group (Bailey's P. hortulana, var. Mineri), then through the Wild Goose group, and by way of such varieties as Schley, Clifford and Macedonia into the true Chicasaws. There is absolutely no line of demarcation, however dim, among these varieties. Such a series of forms cannot be conveniently doled out into species, even when we take the most advanced evolutionary view of what constitutes a species. But as soon as the Wild Goose group is understood to be a company of hybrids the matter becomes

* L. H. Bailey, *Cornell Exp. Sta. Bull.*, 131, p. 170, March, 1897. See also *Bot. Gaz.*, Dec., 1896, p. 461.

comparatively clear. We can easily believe that there have been numerous independent hybrid origins followed by still more numerous secondary, tertiary and quartenary crosses, and these would account fully for the extraordinary variability and wide diversity of characters among these Plums. The varieties of the Miner group may reasonably be supposed to be secondary hybrids between Wild Goose types and Prunus Americana; or they may be, in some instances, primary hybrids in which the Americana influence has preponderated. Such varieties as Ohio Prolific, Schley, Texas Belle and Wooten may be supposed, on the other hand, to be secondary hybrids between Wild Goose and the Chicasaws.

All this will drive every Plum student, pomologist or botanist to a conclusion which we ought to have reached independently before, namely, that no full classification of our cultivated varieties can be made which shall be satisfactory to everybody. It is a matter of unquestionable convenience to divide our multiform varieties into several groups, but the lines between these groups are purely imaginary and arbitrary, and certain varieties which come near the division-line somewhere may be put into one group by one man and into the other group by another, and both men be right. It is all a matter of judgment, and a very delicate matter, too. There has already been too much controversy over some of these doubtful varieties. What plum students need now is less controversy and more patience.

The cultivated Hortulana Plums may be best understood by arranging them in four groups. Three of these have been mentioned—the Miner group, the Wild Goose group and the Schley or Clifford group. These form an unbroken series from Prunus Americana to P. angustifolia. There is a fourth group at present classified with the Hortulanas, but comparatively distinct from the others. This group is made up of such varieties as Wayland, Moreman, Golden Beauty, Reed, Leptune, Kanawha and others. I may be able to add a word concerning this group at another time.

University of Vermont. *F. A. Waugh.*

Cruelty of Asclepias.

THE Butterfly Weed, Asclepias tuberosa, is one of the most conspicuous plants in the Pines, and the flowers are seen all summer long on the different plants which peep out from under hedges and other shady places. The flowers vary in color from the deepest orange-red to pale yellow, and unlike the other species this plant has no milky juice. Another common species, A. obtusifolia, is quite different from A. tuberosa in its power to capture and hold insects until they die. Some of the other species have the same power in a more limited degree, but A. obtusifolia is by far the most cruel member of the family. The hoods surrounding the stigma which contain the nectar are comparatively short in this species, so that insects probing for the nectar often make a mistake and strike the cloven gland from which the pair of pollen-masses are suspended. Honeybees are the most common victims, and sometimes they are caught by the feet and sometimes by the proboscis. When caught by a foot in its struggles to free itself it often strikes another gland on the same or on an adjacent flower, when its frantic efforts increase until each foot is held as in a vise. The gland seems to be sensitive and to close more firmly about its victim the more it struggles, but if this is true it does not relax its hold after the insect is dead, as sensitive glands usually do. It requires careful work to extricate the insect in order to find just how it is caught. The pollen-masses are something like an old-fashioned pair of saddle-bags and hang by black-looking threads joined together at the summit, where it is attached to the gland which holds the insect. On loosening and pulling out this gland it brings with it the curious pollen-masses, and the foot or tongue of the insect is always found fast in the opening or slit of the gland, which seems to have closed around it. It has long been known that the pollen-masses were liberated by the agency of insects, but why so many should be held prisoners and tortured in this cruel manner is one of the mysteries of plant-life. Not only bees but many small handsome butterflies are caught by the tongue and held until they die, and sometimes, but much more rarely, large beetles are caught. In one instance I found the large white-lined Saperda, the parent of the Apple-tree borer, held by three different flowers, and strong as this beetle is it was unable to free itself and so died. It is not at all uncommon to find Rose-bugs made prisoners.

The Swamp Milkweed, Asclepias incarnata, has this power to a certain extent. A few days ago several stems of this plant, with their numerous umbels of small pinkish flowers, were brought from the woods for class purposes and set on the porch in a jar of water. I soon noticed a strange fly flitting about them, the size of the common house-fly, but with a proboscis which could probe to the bottom of the hoods so as to reach the honey. It was probably some species of Chrysops, as it closely resembled the Golden-eyed Chrysops which sometimes so persistently flies about our heads in its effort to bite. But this species, although it had a wicked-looking proboscis, never attempted to bite, and its sole business was with the flowers. A score or more were about the plant, jostling each other in their eagerness for the unrifled flowers, so it seems that this fly is the main instrument in perpetuating this species of Asclepias. Occasionally a fly was caught by a foot and held for a moment, but usually it escaped, and it had done the work of extricating the pollen-masses from the cells so the stigma could be reached.

I have not studied this plant in its home in the swamp, but here on the porch this fly was the only visitor. I placed a jar of Asclepias tuberosa by the side of A. incarnata, and soon several butterflies and other insects alighted on the former, while they passed the latter by, or merely hovered over it for a moment without alighting. A fine Danais butterfly came and sipped the nectar from A. tuberosa, scarcely deigning to notice A. incarnata, and yet she must have alighted on the plant in its home long enough to leave her eggs, for two of her baby caterpillars were feeding on the stems. It is remarkable that this butterfly recognizes all the species of Asclepias and makes use of them as food-plants for her children; for example, in appearance and in texture of the stems and leaves A. tuberosa is totally unlike A. obtusifolia. The two species seem to have nothing in common except the flowers and seeds. A. tuberosa has small green leaves without milky juice, while A. incarnata has a copious supply of the milky fluid, and yet before they bloom our butterfly knows the plants and uses them as food for her young.

As butterflies and wasps passed A. incarnata by, so the fly paid no attention to A. tuberosa. It knew without making the attempt that it could never reach the nectar at the bottom of the long hoods of this species. In my limited study of the Swamp Milkweed I did not find but one fly that it had killed and this was held by one foot. On extricating it I found the foot fast in the gland in the same way that A. obtusifolia holds its victims.

Vineland, N. J. *Mary Treat.*

Notes from Santa Monica Forestry Station.

CONSPICUOUS among summer-flowering Eucalypti growing here are the following:

Eucalyptus citriodora, or more correctly, E. maculata, var. citriodora (F. von Mueller), the lemon-scented Gum-tree. This is an erect, straight-stemmed tree, of rather slender and decidedly elegant habit, sparingly branched, but with numerous long, drooping branchlets, often over ten feet in length. The leaves are long and narrow—lanceolate-falcate in shape, nine to twelve inches long, and one inch broad at the widest part, tapering gradually to a blunt point. They are bright green on both sides, with a conspicuous midrib, yellowish green in the older leaves, maroon in the young foliage. The petioles and young branchlets are

also maroon-colored. The flowers are borne in few-flowered umbels, arranged in small, axillary, paniculate clusters, which are set closely together (a panicle to every leaf) along the previous year's growth of the branchlets. Owing to the arrangement of the drooping branchlets, it often happens that the blossoms on a number of them are crowded together in a dense mass a foot or two in diameter, like a large swarm of bees. The individual flowers are about three-quarters of an inch across, in color creamy white. The seed-pods are about half an inch in length, truncate-ovate, with slightly flaring mouth, so as to be almost wen-shaped. The smooth bark, deciduous in thin flakes, is beautifully colored in delicate tints, varying from pale gray-green to lavender. Occasionally under the summer sun one of these tapering shafts warms up from its cool grays to a clear flesh-tint. Australian reports ascribe considerable utility to the timber of E. citriodora, and ornamentally this tree certainly ranks high, its general appearance at once suggesting the words graceful and elegant. Its flowers are borne profusely in May, June and July, at which time the tree is much frequented by bees. The leaves yield a volatile oil exquisitely lemon-scented. This perfume is not perceptible in the fresh leaves unless they are bruised, but it is gradually exhaled by drying leaves, which remain aromatic long after they are quite dry. Even the ashes of burned leaves retain the perfume. The best specimen of this tree in the arboretum here measures about fifty feet in height, with a spread of eighteen feet, and a girth of twenty-eight inches at one foot from the ground. This is the growth of nine years from planting, ten years from the seed, without irrigation.

Eucalyptus cornuta, the "Yate" tree of south-western Australia, is a tree of fairly rapid growth here, and of somewhat variable habit. It often displays strong tendency to divide at or near the ground, forming several stems unless trimmed. It has lanceolate leaves, slightly falcate, acuminate, five to seven inches long by one to one and a half inches broad at the widest part, dark green on both sides, shining, with a metallic lustre in sunshine. The flowers have very short pedicels, so that the many-flowered umbellate cluster is almost a globular head. In bud the long, slender, cylindrical, curved calyx lids or caps project on all sides like radiating horns, whence the specific name Cornuta. When these caps fall the long stamens spread, forming a pompon of a bright greenish yellow color. Often the blossoms are borne in large masses, and the effect is brilliant. The long, slender, projecting valves of the bell-shaped seed-pods continue the horned appearance to the fruit cluster. The wood of this species is highly valued in its native habitat, being there considered equal to the best ash. The flowers, like those of many other Eucalypti, yield a quantity of nectar, which is eagerly sought by bees, who visit the flowers even before the caps have fallen, and doubtless often help to push them off. The principal blooming season is in July and August, with a secondary season following about midwinter.

Eucalyptus cornuta, var. Lehmannii, as grown here, differs a good deal from the type. It displays the same tendency to divide into several stems, but is a much slower-growing tree with a symmetrically spreading crown of more open and scattered foliage. The leaves are oblong to narrowly obovate, mucronate, two to three inches long by about one inch wide, dull green on both sides, coriaceous, with petioles shorter than those of the type. The individual flowers are sessile, and the calyces united at the base, so that the umbel becomes in this variety a dense head. The horn-like calyx lids are longer, thicker, and often more curved than those of E. cornuta. The pompon is correspondingly larger and of a clear apple-green color. The seed-pods coalesce for almost their entire length, forming a spiny ball which remotely suggests a diminutive hedgehog. As with the type, the curious fruit clusters are long persistent on the tree, where they attract no little attention from visitors to the station.

Eucalyptus tetraptera is a dwarf species with curious characteristics. The leaves are borne in tufts on the ends of the few branches, the old leaves dropping off as the branches elongate. They are ovate-lanceolate in shape, mucronate, very thick and coriaceous in texture, and dull-grass-green in color on both sides. They develop slowly, but when of full size are about eight inches long by two inches broad, with a mucronate point three-eighths of an inch in length. The midrib and petiole are thick and yellowish green in color, like the branchlets. Only one or two flowers appear at a time, and, like the leaves, they are very slow in developing. The fleshy calyx tube, prominently four-angled, green in the bud, flushes a brilliant red as the flower approaches maturity. Finally the pyramidal cap falls, displaying the incurved stamens with their delicately pink filaments tipped by purplish gray anthers. The seed-pods, when full grown, measure two inches in length by one and a half inches in breadth to outside edge of wings. They are quadrangular bell-shaped, with a pronounced wing at each angle, and are supported by a thick, flattened peduncle, bent downward. The brilliant red of the young fruit fades as the pod shrivels. So far the single specimen here has matured no seed. The bark is dull maroon in color and is deciduous in small flakes. The species probably has no value beyond its botanical peculiarities.

Santa Monica, Calif. *John H. Barber.*

New or Little-known Plants.

Coriaria Japonica.

THIS handsome and interesting plant, the representative of a genus monotypic in its family, and composed of six or seven species, natives of the Mediterranean Basin, the Himalayas, northern China, Japan, New Zealand, Chili and Peru, promises to become an inhabitant of our gardens, as it has proved hardy in the Arnold Arboretum, where it was raised in 1893 from seeds gathered by Mr. Veitch the year before near Fukura, on the west coast of the central island of Japan, and where this year it has produced the flowers and fruit which appear in our illustration on page 343 of this issue.

Coriaria Japonica* is a square-stemmed shrub which is said to grow to the height of ten feet. In the Arboretum, however, the arching stems are not more than two and a half feet long, and plants which I saw in the garden of the Forest School near Tōkyō were about the same size. I never encountered wild plants in Japan and they were seen by my companion, Mr. Veitch, only on the excursion which he made to the west coast.

The value of Coriaria Japonica as an ornamental plant is in the long racemose fruit, the showy part consisting of the accrescent petals of the pistillate flowers, which, becoming much thickened and succulent, enclose the five nutlets and form a five-angled, much-flattened, berry-like fruit half an inch in diameter. In describing this plant last year in *The Botanical Magazine* (t. 7509), Sir Joseph Hooker spoke of the cherry or coral-red color of the fruiting petals as its most interesting feature, the mature petals of all the other species being black or violet-black, his statement being enforced by the figure in a Japanese work on the useful plants of that country, in which the fruit is represented as bright red and described as "round, red, very pretty, but poisonous." Maximowicz, who has written a classical monograph of the genus Coriaria, described the fruit as black, with violet juice, and this character is confirmed by the plants in the Arboretum, on which the fruit was bright coral-red on the 20th of July, when it was from a quarter to a third of an inch in diameter, being then in the condition in which it appears in the figure of *The Botanical Magazine*; it then began to enlarge rapidly, and in a few days attained its full size, turning suddenly dark violet-black, the petals becoming filled with juice which dyes purple.

* Coriaria Japonica, Gray, *Mem. Am. Acad.*, n. ser., vi., 383 (*On the Botany of Japan*) (1859).—Miquel, *Ann. Mus. Bot. Lugd. Bat.*, iii., 91 (*Prol. Fl. Jap.*, 255).—Franchet & Savatier, *Enum. Pl. Jap.*, i., 93.—Maximowicz, *Mém. Acad. Sci. St. Pétersbourg*, sér. 7, xxix., No. 3, 9, t.—*Bot. Mag.*, cxxii., t. 7509.

Fig. 45.—Coriaria Japonica.—See page 342.

1. A flowering branch, natural size. 2. A fruiting branch, natural size. 3. A staminate flower, enlarged. 4. A pistillate flower, enlarged. 5. A pistil, enlarged. 6. Vertical section of a fruit, enlarged. 7. A nutlet, enlarged.

The bark of the old stems of Coriaria Japonica is dark orange-color, lustrous and marked by numerous lenticels, while on the upper side of the shoots of the season, which are produced from the axils of the leaves of the previous year, it is rather bright red and yellow-green on the lower side. The leaves are opposite, ovate or ovate-lanceolate, acuminate, conspicuously three-nerved, yellow-green, and from three to six inches in length. The flowers, which are minute, are produced in elongated spreading racemes with the branches of the year from the leaf-scars of leaves of the previous year in clusters of two or three, either all female, or with one raceme of male flowers among them, and clothed with ovate or nearly orbicular leafy bracts, the racemes bearing male flowers being more slender than the others. The staminate flowers, which are borne on short pedicels, are green, and are composed of five minute ovate acute sepals much longer than the oblong-keeled petals, and of ten stamens in two series, with slender filaments which, short at first, lengthen rapidly after the flowers open, becoming much exserted, and linear-oblong introrse anthers inserted on the back. The pistillate flowers are borne on slender pedicels which are about a third of an inch long when the fruit ripens, and are subglobose, green, with five ovate sepals much longer than the broadly ovate imbricated petals rounded at the apex, five exserted slender purple spreading styles slightly thickened toward the apex, a pistil of five carpels each with a single anatropous ovule, which develop into five pale brown subreniform nutlets about an eighth of an inch in length, marked on the sides with five prominent anastomosing ribs. *C. S. S.*

Foreign Correspondence.

London Letter.

London Parks and Cafés.—A movement has been started, headed by several influential people, to establish in the principal public parks of the metropolis, cafés of similar character to those of the parks of Paris and other Continental towns. Presumably the London crowds cannot find sufficient enjoyment in the trees, flowers and lawns of our parks and public gardens, and even the bands which now play on every day during the summer in most of them do not contribute all that is needed to make such places thoroughly attractive. I am inclined to believe that the crowds do find plenty of healthy recreation in our parks as they are, and that it is only the man of pleasure who now wants to add the flaunting café or biere-hal. Of course, the parks are for the people, and properly conducted refreshment halls are not out of keeping with their object, but whether the midnight revels of the Bois de Boulogne would be an improvement to Hyde or Regents' Park is a question of considerable doubt for Englishmen, at any rate.

Earlier Opening of Kew.—From time to time, and more or less concurrently with the "big gooseberry stories," an agitation is started in favor of the earlier opening to the public of the Royal Gardens, Kew. The movement is purely local, and has for its main object the gratification of the leisured people residing near the gardens. The public are at present admitted from 12 o'clock, noon, till sunset, except on Sundays, when the opening hour is 1 o'clock, and on bank holidays, when it is 10 o'clock. Before these hours, with the exception of Sunday mornings, the gardens are open only to students, artists and visitors from a long distance, while to gardeners generally they are always accessible. It is difficult to satisfy these agitators, who look upon Kew merely as a pleasant sort of park where one can smoke or read comfortably under the shade of trees, that the principal object for which the gardens were founded, and are still supported, is the development of botanical science and the application of its resources to the enrichment of the empire, and that any further concession to the pleasure-seeker than those already made could only be at the expense of this object. If Kew is to be placed on a level with Hampstead Heath or Epping Forest the time of its staff will be wholly employed in looking after irresponsible visitors.

The Fruit Crop in England.—With the exception of a few favored districts, the prospects of fruit-growers this year are bad. All the plums have fared very badly, some counties—Cambridge, for instance, which depends largely upon Green Gages, having scarcely any. Apples and pears are generally very weak. Cherries have not been so poor for years. Altogether, the outlook for the English fruit farmer this year is a melancholy one. We shall probably learn from the county council lecturer that failure is due to our bad methods of cultivation. Mr. R. D. Blackmore, writing after forty years' experience in fruit-culture, attributes this year's bad crop to the long summer drought experienced last year, followed by a wet September, which caused the trees to rush into a late second growth at the expense of the bloom-bud, which, though formed, was weak, and, consequently, when the flowers opened they succumbed to the first chill. Probably an excess of imported fruit will make up the deficiency, though what fruit we have now is at almost famine prices.

Cannas and Gladioli.—A novel and highly decorative use of the small-flowered forms of Canna with Gladiolus gandavensis is practised by the Parisian market-growers. The Cannas are planted in the usual manner in six or eight inch pots, and along with each one, two or three corms of the Gladiolus are placed; these grow with the Cannas and when in flower they combine admirably with their leaves, having a much better effect than even the best varieties of Canna, while their cost is only about a franc per pot. For the decoration of halls, cafés, restaurants, etc., they find much favor with the Parisians, and to the uninitiated the flowers of the Gladiolus serve just as well, probably better than the best of Cannas. It may be that the "trick" is well known to American market-growers, but I have never seen examples of it in England. It is certainly a cheap and easy method of producing serviceable material for ordinary decoration. A bed of common Cannas and this Gladiolus, or even mixed varieties, would be effective in the flower garden.

Hemerocallis aurantiaca and its variety major.—The variety has become universally popular with growers of herbaceous plants, its handsome bright green leaves in bold tufts and its enormous orange-yellow flowers placing it in the first rank among hardy plants for prominent positions in the border or flower garden. Some who have essayed its cultivation have expressed themselves disappointed with it, but this is no doubt because the plants are small and weak consequent upon rapid and exhaustive propagation. When full-grown in strong, loamy soil it is by far the handsomest of the genus. The type has remained comparatively unknown; indeed, some one lately ventured to doubt its existence, in cultivation at any rate. It was, however, first described by Mr. Baker in *The Gardeners' Chronicle* in 1890 from a plant in the Kew collection, where it still flourishes and has flowered freely this year. The variety is of Japanese origin and was introduced four years ago by Messrs. Wallace, of Colchester.

Calceolaria alba.—A first-class certificate was awarded to this plant recently by the Royal Horticultural Society, Mr. Bennett-Poë showing some beautifully grown examples of it in pots. It was first brought into notice at Kew last year, where it flowered profusely on a south wall all through the summer, after having survived several winters without protection. On the strength of this the plant was supposed to be hardy, but last winter, although comparatively a mild one, proved fatal to all the plants left in the open at Kew. It is a native of Chili, and, therefore, likely to be happiest under cold greenhouse treatment, except in warm situations, such, for instance, as are suitable for the Chilian Desfontainea. It forms a dense shrub not unlike the common lavender, but softer in leaf and stem, and the flowers, which are borne in the greatest profusion in axillary clusters, are globular and pure white, resembling in effect the

fruits of the Snowberry, Symphoricarpus. Both seeds and plants of it are now to be had from the nurserymen.

ERIOPSIS HELENÆ.—This is a new species, according to Dr. Kranzlin, who describes it as the largest flowered yet found in the genus, resembling at first sight E. biloba, but more than twice as large. The pseudo bulbs are sixteen inches long, with one long and three short internodes, and the leaves twenty inches long by one inch in width; the scape is as long as the leaves, and bears a nodding raceme of yellow flowers with purple margins, and the lip is densely spotted with the same color. It has been imported from Peru by Messrs. F. Sander & Co., St. Albans, with whom it has lately flowered. The genus is not one of the most popular with English cultivators, the species hitherto grown being shy of flowering. Possibly this new species may prove more satisfactory. Dr. Kranzlin says "it is undoubtedly the finest species of this small genus."

BRITISH FERNS.—The numerous varieties, many of them very beautiful, of British Ferns now in cultivation, and for the origin of which we are indebted to the careful cultivation, selection and, it is said, cross-breeding of a few enthusiasts, have increased in favor, especially among amateurs. We have now a society devoted to them, calling itself the British Pteridological, and having for its objects the dissemination of a wider knowledge of the merits and beauties of British Ferns and their varieties, a regulation of their nomenclature, the encouragement of their general culture by providing a means, at least once a year, for an exhibition of them and the meeting of their finders and raisers under one roof for the exchange of cultural knowledge and specimens. Mr. E. J. Lowe, F. R. S., has raised some most extraordinary varieties, especially among Scolopendriums, and he has written several interesting volumes upon the peculiarities of growth and variation among ferns generally under artificial cultivation. The president of the society is Dr. Stansfield.

London. *W. Watson.*

Cultural Department.

Gooseberries.

WHILE this season has not been altogether favorable to some fruits it has suited Gooseberries to a nicety. The cool, showery weather in May and June swelled out the fruits to more than double the size to which we usually grow them, and the bushes bore such an enormous crop that they were severely thinned when about half-grown, this green fruit proving acceptable for sauce and pies. We have only found one or two varieties to be thoroughly reliable. Of the foreign or English sorts, Whinham's Industry is easily the best we have tried; some sorts bear larger berries, but for heavy annual crops, free growth and a total absence of mildew we considered Industry the best foreign variety. From bushes planted in the fall of 1894 we gathered an average of twelve quarts of ripe fruit from each plant, besides the green fruit picked early in the season and that which burst during the wet weather. We find this variety succeeds best when not planted in a fully exposed place, but where the plants get sunshine about half the day. Full sunshine during all of the day causes some of the berries which are most exposed to be scorched and to drop off.

Among American varieties we think highly of Columbus, sent out by Ellwanger & Barry, of Rochester, New York, four or five years ago. The fruit is much larger with us than that of Industry; skin greenish yellow and smooth, and the foliage is large and smooth. It is a heavy cropper and the most robust grower of any sort we have tested. Triumph is a large golden-yellow variety of size similar to Columbus, and is an equally robust grower and great cropper. Both these varieties have very thick skins, and thick skins seem to be an essential quality of any gooseberry which is of use in America, as thin-skinned sorts are literally cooked on the bushes by scorching heat from the sun in July. Downing is an old reliable sort, much smaller than Triumph and Columbus, but a reliable cropper, and the fruit ripens some days earlier than that of any other kinds we have tried.

Gooseberries prefer a cool and rather moist climate. We always mulch our bushes after growth commences and leave this surface-dressing on until fall, when it is removed. The bushes are then pruned and a coating of good rotten manure is given them. Like all small fruits, Gooseberries have large quantities of fine fibrous roots near the surface of the soil and no digging should be done among them. Stirring with a hoe to keep down weeds and to loosen the surface is all the cultivation needed. During the growing season we give our bushes several soakings of liquid-manure after heavy rainfalls, and this labor is fully repaid by increased size of the fruit.

Gooseberries can be propagated in a variety of ways, but cuttings make the most shapely bushes. The strongest and best ripened shoots should be selected. We prefer cuttings about a foot long after the top has been shortened back. We rub off all lower eyes and leave only four to five at the top of each cutting. If it is not desired to plant them out in the fall they can be heeled into a cold frame; they should be tramped firmly and never allowed to become dry. By April 1st they will be found to have callus formed and can be planted out in any good garden soil, and a moist location should have the preference. In dry weather water must be given or few of the cuttings will grow. Propagation by layers and suckers will give larger bushes in a short time, but the bushes are never shapely and constantly send up suckers from the base. We prefer fall planting for Gooseberries, and, indeed, for nearly all other fruits, and move them as soon as they shed their foliage.

Taunton, Mass. *W. N. Craig.*

Fern Notes.

FEW Ferns require repotting at this season, except seedlings or young stock that is much root-bound and may be needed for use in Fern-pans, or for table or mantel decorations during the winter. Young plants of the common species used for these purposes, for example, Adiantum cuneatum, varieties of Pteris, Anychia Japonicum, Davallia tenuifolia stricta and several of the Aspidiums, may be potted on at any season of the year when grown in a temperature of sixty degrees, and will grow away freely, while old plants of the same species grow but little during the fall and winter months, and may receive a severe check from having their roots disturbed too late in the season.

Watering should be done early in the morning at this season, as the night air is damp, and plants watered late in the day have no chance to dry off, so that damping of the foliage follows. Abundant ventilation, both day and night, is essential, and even tropical species require plenty of fresh air. For many species of Ferns the soil is of much less moment than the condition of the atmosphere, though good drainage is necessary for the health of the roots. For the ordinary decorative species referred to, a good soil is a light loam enriched with some thoroughly rotted manure from an old hot-bed.

The sowing of Fern-spores of any delicate species after this time of year is ill-advised, as there is greater risk of the tender young plants damping off during the shorter days of early winter than in the spring. Their growth is at best quite slow in winter, and but little time is gained by fall sowing. As an instance of the facility with which Fern-spores may be carried from place to place I recall a greenhouse which had contained no Ferns, and where no less than twenty-six species and varieties were growing beneath the benches within eighteen months from the time of building the house. The nearest Fern-house to the house in question was fully one hundred feet distant, and the spores were doubtless transferred in the clothing of persons who passed from one house to the other.

Of course, all Ferns cannot be grown with equal success in the same house, for many cool-house Ferns are unresponsive in a high temperature, and others from a tropical habitat do not flourish when kept too cool. The medium temperature of fifty to fifty-five degrees, maintained throughout the winter, will make it possible to grow with satisfaction quite a large and varied collection of these plants, and a house of this character well cared for will prove one of the most enjoyable in an establishment.

The so-called Boston Fern, a form of Nephrolepis exaltata, has become a great favorite for the window garden as well as the greenhouse during the past two or three seasons, and deserves the distinction. It is a plant of easy culture and rapid growth, and makes an interesting specimen in a pot six inches or more in size. In common with the other Sword Ferns, this Nephrolepis enjoys good living, and grows finely in strong loam. When pot-bound it is benefited by watering with weak liquid manure about once a week. N. cordata compacta and N. davallioides furcans are also largely grown for decorative purposes; the first-named is probably the better house plant,

and makes a good specimen even in a four-inch pot. While curiosities or monstrosities such as the birds, beasts and reptiles formed by the Japanese from the rhizomes of Davallia Mariesii cannot be recommended, grown in a more natural manner this species is useful for the cool fernery, though nearly or quite deciduous. In fact, the Davallias generally are interesting, and D. bullata, D. Canariensis, D. pentaphylla, D. tenuifolia stricta and D. elegans may all be grown to advantage in a temperate house, either as pot-plants or in baskets. The latter method gives a better opportunity to dispose of the straggling rhizomes by pegging down than in the case of those grown in pots.

Holmesburg, Pa. *W. H. Taplin.*

Gloxinias.

SEEDS of Gloxinias are usually sown during autumn, though sowing in spring is becoming more common. One of the chief advantages of autumn sowing is that all the plants come into bloom when a suitably low temperature can be maintained. The flowers are susceptible to flagging, and the blooming period is considerably shortened when it occurs during the hot, drying summer months. It is also somewhat difficult to prevent the plants from becoming drawn if a heavy shading has to be used. The plants are not so apt to suffer from flagging influences so long as sufficient water is provided, but if neglected in this respect disfigurement of the foliage will quickly follow.

February is a favorable time for sowing the seed, and the temperature of an ordinary propagating house is sufficiently high for starting them. The seed-pans intended for use must be thoroughly clean and dry, so as to insure against any germs of fungus. If this precaution is not taken the fungus will soon make its appearance on the surface of the soil and cut off the little plants shortly after they have started. Much of what is commonly known as damping can be traced to this source, though this is by no means the only source from which it proceeds, and careless watering will often cause it. We do not water on the surface, but supply the moisture from below by keeping the pan standing in a saucer of water. The dangers of damping may be considerably lessened by pricking out the seedlings into fresh soil while they are as small as they can possibly be handled. A good compost for the seeds is composed of finely sifted leaf-mold and silver sand in about equal portions. The same compost may be used for the first pricking out, but for subsequent shiftings less sand will be needed, and for the later pottings well-rotted sod soil should be used with about one-third of the compost. We sift this soil also, as the roots are rather fine.

After the plants are established in three-inch pots we place them in a cold frame, where they grow more freely than in any other place in which we have tried them. Removable shades must, of course, be provided, and light sprinkling twice daily during bright sunshiny days, to maintain a suitable atmosphere. We usually leave the plants in frames until flowering commences, when they are removed in batches to a house where they can be displayed to the best advantage. We choose the coolest house possible for them and provide suitable shading. The poorer varieties are discarded or set aside as soon as they show their character, to prevent good varieties being crossed by them. We save seeds from our own plants, and this is by no means a troublesome matter, as they are produced freely if the flowers are kept dry.

Tarrytown, N. Y. *William Scott.*

Hardy Perennials.

NOT a few of the perennial species of Coreopsis are quite hardy, and as they flower very freely during a long season they are specially suited for use as border plants. Probably the best-known species in gardens is C. lanceolata; it is altogether hardy and thrives in any good soil, and the flowers continue from early summer until frost. Full-grown plants range from one to two feet in height. The flower-heads are of a shining yellow color, and on well-grown plants measure from two to three inches across. They are produced on long, naked pedicels which add much to the effectiveness of the plants, and are useful for cutting. This Coreopsis produces an abundance of seeds, and young plants are easily raised from them. Sown early in spring the young plants may be set out into the ground in the early summer and will provide a good supply of flowers in the fall.

Another satisfactory species for the garden, though but seldom seen, is Coreopsis delphinifolia. This distinct southern species is quite hardy without protection in this vicinity, and grows luxuriantly. The plants reach a height of two feet, and its upright stems are thickly clothed with deep green leaves divided into three sessile leaflets. The yellow flower-heads are not quite as large as those of some of the other perennial kinds, but they are produced plentifully. In a rich sandy soil, where there is abundance of light, this plant makes a good border perennial.

Coreopsis verticellata has slender upright stems and finely cut foliage, with a neat bushy habit. Its height varies from eighteen inches to two feet, and the stems are set off by dark green and finely cut leaves, which are produced in whorls. The deep yellow flower-heads measure about one inch and a half across and are most plentiful during late summer and early fall. C. senifolia, found from North Carolina to Florida, is quite hardy here. The stout, vigorous plants grow to be three feet tall and bear good-sized leaves, which are divided into three entire sessile divisions. The dull yellow flowers are of medium size.

Coreopsis grandiflora is the best of the perennial species, and where it will grow and thrive it is one of the showiest of the low-growing compositæ for the border. I regret that it does not thrive here as well as many of the other species. It does not live and has to be grown from seed frequently. I notice that Dr. Asa Gray, in the *Synoptical Flora of North America*, says that the root is sometimes annual, and this is possibly the reason for its short existence. It resembles C. lanceolata in many of its parts, but the main distinction for garden purposes is that its flowers are much larger and the ray florets are more deeply cut. Other species grown here that are quite hardy and reliable are C. auriculata, C. pubescens, C. tripteris and C. rosea.

The wild Monkshood, Aconitum uncinatum, when planted in a favorable position, makes a splendid mass of dark blue. It is the best plant bearing blue flowers at this time. A slightly shaded spot and rather rich, moist soil here suit it best. The stems of this Monkshood are not very stout, and need staking to keep them erect, so that the flowers can be seen to better advantage. Our plants are from four to five feet high, well covered with dark green leaves, and the dark blue flowers are produced in large showy racemes.

Statice latifolia is again lending its grace and airiness to the border with its broad, spreading panicles of blue flowers. This is the best hardy perennial species in the genus. Large plants make a striking contrast and pleasing effect among more substantial-looking plants. A deep, rich, somewhat moist soil is necessary, and the plants should not be disturbed often. Another species well worth growing is S. elata. Though hardly as pleasing as S. latifolia, it is, nevertheless, a desirable border plant. It is slightly taller and not as graceful or airy, but it has large showy panicles of small blue flowers, and makes a vigorous plant. Besides the use of these delicate sprays for intermixing with other flowers, they are also sometimes dried like the "Everlastings."

Rudbeckia speciosa makes a rich display in the border when large clumps are planted from six to eight yards apart, and the glowing masses of bloom are showy at a considerable distance. The flower-heads of this Cone-flower are a rich orange-yellow with a showy velvety maroon centre, and measure from three to four inches in diameter. They are borne profusely in dense masses. The compact plants are about two feet in height and thickly covered with ovate lanceolate leaves. It thrives best in an open position in light rich soil.

Veronica longifolia, var. subsessilis, deserves to be classed among choice garden perennials. Like many more of our showy garden plants, it comes from Japan, and is perfectly hardy here. When well grown it attains a height of from three to four feet and its stems are terminated with large dense spikes of deep purple-blue flowers, which make it effective. V. Virginica is a tall-growing species and a native plant. Well-established plants are conspicuous at this time with their large terminal spikes of white flowers.

Harvard Botanic Garden, Cambridge, Mass. *Robert Cameron.*

Rock Garden Notes.

ONE of the handsomest plants on the rockery now is the Mexican Hunnemannia fumariæfolia. The large yellow flowers are not unlike the Californian Poppy, but have more substance, and the flowers last several days after being cut. The plants are not entirely hardy here, though they come through some winters in good condition, and some half-decayed leaves thrown over the roots help them to winter over. If seed is started in the fall it should have the benefit of a warm house; spring-sown seeds delay the flowering period until the beginning of July.

Owing, I suppose, to the moist season, the varieties of Achimenes have done exceptionally well this summer. Care

is taken to plant them in somewhat shaded situations, otherwise they neither grow nor flower quite so freely. The plants make such a host of underground tubercles that it is only necessary to lift a few of them in the fall by inserting a trowel under the middle portion of the plant, and transfer them with the soil to a box. The kinds should be kept separate, and the boxes stand in a moderately warm dry place during winter.

Papaver rupifragum is almost past its second blooming since the plants were put out in the spring. The seed capsules were cut off after the first flowering, the stems cut rather close, and they soon branched out again, producing hundreds of rather small flowers on each plant. The flowers are dull red, the leaves grayish green. Salvia Pitcheri is only coming into flower. This lovely species needs renewing every now and then to have it at its best.

Potentilla fruticosa, the native shrubby Cinque-foil, now in full flower, makes a desirable shrub for use among rocks. It can be trimmed to any shape or cut down annually if need be. Spiræa Anthony Waterer, after two years' trial, has fulfilled all the claims made for it. Since early spring it has never been out of bloom, and the bushes are not a foot high yet. Plants started into growth indoors early in the season will give a cutting from nearly every bud. They are as easy to root as Coleus.

Hydrolea spinosa being a blue flower and a very pretty one should have a place in every large garden. It is apt to run to seed in a short time if it is not watched. If planted in clumps it is well to nip off half the shoots when they get to a certain height and let the other half bloom. By the time the first lot are done flowering the others will take their places, when those which flowered first should be divested of their seed vessels. These shoots will bloom again later on.

Anoda acerifolia, a malvaceous plant from Mexico, is evidently closely allied to Callirhoe. The flowers are about the same size and color as those of the well-known C. involucrata. Instead of a few straggling stems, as is the case with the Callirhoe, the Anoda will cover several square feet with a dense mass of creeping shoots. It is just coming into bloom now, and until checked by cold weather it will be an attractive object. It is not hardy with us, but it ripens seeds in abundance.

Lilium lancifolium roseum and L. album are among the most satisfactory of the genus with us, coming up regularly every year and producing six and eight blooms to the stalk. A top-dressing of manure each fall seems to suit them. L. Michauxii does fairly well, and L. auratum succeeds only the first year after planting, dwindling each season afterwards until it dies.

Plumbago Larpentæ, or as it is now called, Ceratostigma plumbaginoides, is, perhaps, the prettiest of our blue-flowered hardy perennials. It is well adapted for rock-work, as it grows only a few inches high, and in favorable situations it blooms from midsummer until frost. This species was grown as a stove plant for a long time after its introduction. Although perfectly hardy it does best in countries having a high summer temperature.

Clitoria ternatea has flowers quite as large as the native C. Mariana; the color is blue or white. It is best treated as an annual, and if sown early it will cover an astonishing amount of space.

Botanic Garden, Washington, D. C. *G. W. Oliver.*

Correspondence.

The Green Scale of Coffee.

To the Editor of GARDEN AND FOREST:

Sir,—It seems desirable to record the fact that the green Coffee scale of Ceylon, so destructive in that country, has been found on Coffee in Sao Paulo, Brazil, by Dr. von Ihering. The specimens, just received from the S. Paulo Museum, agree excellently with others sent from Ceylon by Mr. E. E. Green. The insect is a species of Lecanium (L. viride, Green) very similar to our common L. hesperidum, but considerably smaller, and of a green color.

Mesilla, N. M. *T. D. A. Cockerell.*

Hardiness of the Montbretias.

To the Editor of GARDEN AND FOREST:

Sir,—I read with interest in your issue for August 18th the note on Crocosmia aurea imperialis by Mr. Gerard, whose articles I have greatly enjoyed and profited by. Mr. Gerard states that "the Montbretias only have been tried here, but have never survived in the open." In New Hampshire we have a severe climate, occasionally twenty degrees below zero, and no protecting snow, perhaps, at the time, and the ground freezes to the depth of from two and a half to four feet. Two years ago this fall I set in the open a lot of Montbretia crocosmia flora, and gave them a covering of leaves only. They have passed through two severe winters, have greatly increased in numbers, and to-day are in full bloom. Again, the year before I caused to be planted in a cemetery in which I am interested a lot of M. Pottsii, giving them the same treatment, and with about the same results, though a few never came to the surface. Mr. J. Woodward Manning, of Reading, Massachusetts, when visiting the cemetery with me spoke of M. Pottsii as being very tender, and was surprised to see it thriving here grown in this way. The soil in each case is a sandy loam with good drainage, with full exposure and no protecting trees or fences. This winter I propose trying a few plants wholly unprotected, to test the results of this treatment.

Nashua, N. H. *C. W. Hoitt.*

Japan Plums.

To the Editor of GARDEN AND FOREST:

Sir,—This new race of garden Plums has been regarded with much interest recently, principally, perhaps, because of the claim made that the Japan Plums do not become a prey to the black-knot fungus that has made it practically impossible of late years to grow the older race of garden Plums.

We have an almost complete set of these Plums under trial so far as they are now in commerce, and this year have been able to judge what the fruit is like. Prunus Simoni is the progenitor of this race, and while that species is a rather poor fruit it is very distinct, both in shape, flavor and habit of growth. There is an unpleasant astringency in the skin of the fruit that affects preserves even, and it is necessary to peel the fruit to avoid this unpleasant flavor. But the value of P. Simoni is as a fruit for hybridists to work with.

The best Japan Plum we have found thus far is the Burbank, so named after its raiser, and which seems to be a cross between Prunus Simoni and one of our native Plums. There is certainly no finer plum in cultivation to-day if we take into consideration its hardiness, free growth and the large size and excellent flavor of its fruit. The tree was in full bloom this spring when a severe frost occurred that ruined most other trees in bloom, but the Burbank Plum came through well and did not seem hurt in the least. The growth made in the first two years after planting was phenomenal, about six feet all over the tree, and no signs of winter-killing were visible. The fruit is as large as a moderate-sized peach, with yellow flesh and a very small stone. We have decided to graft all the older kinds of Plum with the Burbank next spring. This will have the effect of modifying the growth somewhat, and may eventually be an unequal union of stock and scion. This resulted when P. Simoni was worked on the common sorts that had been subject to black-knot, but otherwise the effect was good.

Another Plum we have fruited to a limited extent this year is the Kelsey. It is a much smaller fruit than the Burbank, greenish yellow in color, somewhat like the Green Gage, but not so good in flavor, and it is not a very vigorous grower. It will need another year's trial before we can tell of its value with certainty.

The Abundance Plum is said to excel the Burbank in all respects. I shall be surprised to find this a fact, and it does not now seem impossible. It is highly recommended for planting for market, and a great many of the trees have been set out in this district. We have not fruited it yet, but hope to next year. Among others that are on trial are the Wickson and Satsuma, of Japanese origin. All have proved hardy, free from disease and not subject to any insect attacks. The only objection to be brought against them is their spreading habit, but if this characteristic had been known earlier it could have been corrected by pruning. The knife should be used freely on young trees to bring them into shape and keep them compact, so as to prevent breakage to the trees hereafter by heavy crops of fruit.

To those who wish to grow Plums in the garden I advise the trying of a set of these Japan Plums, as there seems to be good reason to believe that they will be the Plums of the future when the black-knot has wiped the older race out of existence. This pest is hard to control when the hedgerows are full of native species of Prunus, and these trees serve for its propagation. Fruit growers have considered it hopeless to be able to fight the fungus, and are planting the Japanese Plums in place of the native kinds. In planting it should be borne in mind that a much greater distance is needed between the trees

than between other Plums—at least eighteen feet when mature growth is reached by the trees. The curculio seems to be quite as troublesome in these new Plums as on the older ones, though we had hoped much from the thicker-skinned fruit. But to have clear-skinned plums the curculio must be fought in early summer, when it is doing its work. We lost but few from the stings, but the fruit was disfigured.

South Lancaster, Mass. *E. O. Orpet.*

Notes.

The annual meeting of the West Virginia Horticultural Society, Sheep-breeders and Wool-growers' Association, together with the State Board of Agriculture, will be held at Martinsburg, West Virginia, from October 12th to 15th.

The best cucumbers in market now are those grown under glass near Morganville, New Jersey, the heavy rains of the past weeks having injured the field crops of this vegetable. Choice cauliflower, from western New York, costs thirty cents a head. Small yellow tomatoes, for preserving, and immense yellow cucumbers, known in the trade as mustard pickles, are early fall offerings, and new Brussels sprouts from Long Island.

The sales of western fruits this summer have been exceptionally large here, and those of last week surpassed all former records. Altogether, 123 carloads from California, Oregon, Washington and Utah were sold. Grapes, peaches, plums and Bartlett pears comprised the bulk of these shipments, which included the first Zoe, Forelle and Comice pears of this season, with considerable quantities of Seckel and Buerre Clairgeau pears. Two carloads of Late Valencia oranges were a remarkable item in the long list of California fruits.

The California correspondent of the New York *Tribune*, in a dispatch to that journal a few days ago, stated that the Big Star Beet-sugar mill which will start up next January near Martinez will not only make sugar from beets, but will refine cane-sugar from Hawaiian plantations that are not controlled by the present monopoly. It is estimated that this year's crop, which is outside the influence of the trust, amounts to 200,000 tons, of which a large fraction will come to this factory. Stockton is also to have a beet-sugar factory, the plant of which will cost over $500,000. Its capacity will be 500 tons. The soil of the rich San Joaquin Valley is specially adapted to sugar-beets, and tests have shown that the saccharine percentage is very large.

Plants sometimes acquire a reputation for being difficult subjects to grow or flower when they may only require some slightly special treatment or even a particular location. Cattleya Dowiana has a reputation for miffiness, but Mr. Gerard, who recently sent some of its handsome flowers to this office, states that it has bloomed regularly in August in his greenhouse with no special care, except that it is grown in a basket, and is retained as far as possible in the same situation, a place where it finds much pure air and a moderate amount of light. This Cattleya is one of the most distinctly colored of the family, and is a pleasing change from the ordinary purple kinds. The very large flowers have petals and sepals of nankeen-yellow, and the large lip is a rich dark crimson, finely veined with gold. The petals and lip are both beautifully fringed.

The local receipts of apples for last week amounted to 11,342 barrels. Duchess of Oldenburg, Gravenstein, Maiden's Blush, Codling, Pound Sweets, Orange, Holland and Twenty-ounce Pippins were the principal sorts, with some specially large and showy Alexanders. The best peaches now come from western Maryland and from Missouri and Arkansas, although the main dependence is, of course, on the large supplies of more ordinary quality from Maryland and Delaware. Concord, Niagara, Delaware, Wyoming, Worden, Moore's Early and Champion grapes are all now in season and come from the interior of this state; three-pound baskets sell for fifteen to forty cents, according to the variety and quality. Hot-house grapes, nectarines and figs, apricots from Arizona, and large alligator pears are among the special offerings in choice collections of fruit.

Watermelons continue plentiful, and in this city an ordinary day's business last week comprised twenty-one carloads and 43,086 melons by steamer, besides wagonloads from near-by farms. Jenny Lind and other varieties of muskmelons are coming in large quantities from Maryland, Virginia and New Jersey. Among the most notable offerings of fruits now seen are some Montreal muskmelons. These are not only of immense size, but superior flavor and quality, due in some measure to their quick growth in the longer days of the brief Canada summer, and seeds of these famous melons fail to give as large and as good fruits in this region. Six of these melons, with the packing of hay, fill a box which would hold two bushels and a half, and $2.00 each was the price asked on Saturday in the fancy-fruit stores. An exceptionally large one weighed twenty-four pounds, an average weight being from fifteen to eighteen pounds. Some of the so-called banana melons, from New Jersey, were seen in Washington Market last week, where they were regarded mainly as a curiosity, though a few found sale at twenty-five cents each. These melons are from twelve to fifteen inches long and three to five inches through, with greenish yellow and rather smooth skin, and fine-grained flesh without distinctive or rich flavor. Seeds of this melon were formerly offered in the catalogues, but no mention has been made for several years, owing to lack of demand for them.

In a late number of *The Cultivator and Country Gentleman*, Mr. W. C. Rockford, of Genesee County, Michigan, gives an interesting account of his experience last year in husking some 3,000 bushels of corn by machine. The cost of husking by the usual hand method is three to four cents a bushel in that section, and a saving of labor and probably of money was anticipated, since husking and shredding was accomplished at one operation. A powerful machine with steam motor was used, and the husking was well done, though some of the kernels were shelled in the process. But the shredding of the husks and stalks for fodder was the main consideration in this experiment, and while the stalks were crushed and flattened, they were not cut as fine as in the ordinary cutting-box operated by horse-power. The stalks were allowed to become thoroughly dry before husking, and the crushed fodder was stored in small stacks to prevent any possible souring. No trouble was experienced in this respect, although several days of heavy rains occurred at the completion of the work, and the stacks shed water almost perfectly. In this first year's experience with this machine an average of 400 bushels of very heavy corn was husked a day, and the cost, including labor and boarding, amounted to nearly five cents a bushel. Mr. Rockford's conclusion is that unless a machine can be had which shells the kernels less than this one did, the machine method is not practicable when the corn is intended for sale. There is also less waste of fodder when it is more finely cut by the old method, though the machine-cut stalks in some parts of the country are baled and sold in cities, where there is a growing demand for such provender at prices which compare favorably with hay.

At the annual meeting of the American Association of Economic Entomologists held in Detroit, August 12th and 13th, Dr. R. O. Howard, of the Department of Agriculture, Washington, District of Columbia, speaking of the effect of temperature upon the hibernation of injurious insects, stated that in experiments with such insects in cold storage a consecutive cold temperature proved favorable to successful hibernation, while a low temperature followed by a high one with a return to a low one, almost always resulted in death to the insect. The conclusion is that a steadily cold winter with a temperature even much below the average will usually be followed by an abundance of insects, and that after a winter characterized by alternate cold and warm spells, fewer individuals will survive. Besides a brief account of the practical work done by the Gypsy Moth Commission in Massachusetts, Professor H. K. Kirkland, of the Board of Agriculture of that state, reported that arsenate of lead seemed to be quite as effectual as Paris green as an insecticide, with cheapness in its favor, since it costs but seven cents a pound, whereas Paris green costs twenty to twenty-five cents. Other interesting subjects considered were The Weights of Bees and the Loads they Carry, in a paper by Professor C. P. Gillette, and The Lac and Wax from Insects, on which subject Dr. Howard said that while in some oriental countries industries of considerable importance have resulted from the use of these secretions, no such use has yet been made of them in this country, although several species of the scale insects yielding these substances exist in the southwestern part of the United States and may prove to have commercial value. For example, there is an almost unlimited quantity of a bark-louse of this class found upon Oaks of several species in California, and chemical investigations which are now being made have already demonstrated that wax of good quality may be dissolved from the insect mass by chloroform, and that an insoluble residue is left which much resembles rubber in its physical proportions. These chemical investigations are being continued, with much interest, for the supply of rubber is said to be decreasing, owing largely to waste in gathering it.